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IMPERFORATE ANUS AND RECTUM.

BY J. MASON WARREN, M.D., BOSTON.

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THE following cases of imperforate anus, with malformation of the rectum, present several points of interest in connection with the question of attempting to afford relief by a surgical operation. In cases of simple occlusion of the anus, there can be no doubt of the propriety of opening it, either by a puncture or by a crucial incision, maintaining the passage afterwards by the use of bougies. The great majority of cases, however, as they occur in practice, are by no means so easily disposed of, being, as a general rule, complicated with an imperforate condition of the lower part of the rectum, and in many instances also with an abnormal opening communicating either with the external surface of the body, or more commonly with the bladder or vagina. In a very considerable proportion of cases, also, the anus is perfectly formed externally, but terminates within in a cul de sac, and a few instances have been recorded in which there was total absence of the rectum, and even of the whole large intestine.*

Upon the subject of operating for the relief of imperforate rectum, surgeons are by no means unanimous. The great fatality which attends these operations, the difficulty often experienced in the after-treatment to prevent the closure of the artificial opening, and lastly, and perhaps chiefly, the very imperfect character of many of the so-called cures, resulting in life-long discomfort to the patient, have induced many surgeons of experience altogether to discountenance all attempts at operative interference. On the other hand, the certainty of death if left to nature, the fact that the operation has sometimes been fully successful, the promise afforded by improved operative

* Of this latter malformation I have seen one case, in which the large intestine was absent, with the exception of the cæcum.

methods, and, finally, the natural reluctance of the surgeon and friends to leave anything untried which may possibly save life, combine to justify any rational attempt at relief. The theory that the cures are necessarily imperfect, which affords the only real argument against operating, is disproved by the very successful cases recorded by Benjamin Bell, Amussat, Latta and others.*

The operation which promises the best results, and which I have several times performed with success, consists in freely dissecting through the tissues which intervene between the cul de sac of the rectum and the external surface of the body, then drawing down and puncturing the bowel, and finally securing it by sutures to the margins of the divided integument; thus forming a new canal with a continuous mucous lining, instead of the long fistulous passage which results from a mere puncture with the bistoury or trocar.†

During the past year I have seen four cases of imperforate anus and rectum. In two of them there was a fistulous passage communicating in one case with the vagina, and, in the other, opening in the perinæum half an inch in front of the normal position of the anus. In both of these cases I was able to reestablish the natural passage by the operation just described. In a third case, upon which I operated by puncturing the distended rectum, the child died, and in a fourth case I advised against any operative interference. These four cases I now propose to relate, exhibiting to the Society the specimens from the two last mentioned.

CASE I.—Imperforate Anus, with abnormal Opening of the Rectum externally.—A female child, now 2½ years old, was born with a small fistulous opening directly behind the vagina, and half an inch in front of the normal position of the anus, through which the fecal matter was discharged very slowly and with much difficulty. The child was therefore brought to the hospital, where the opening was enlarged by one of the surgeons, who enjoined it upon the parents to keep it from closing up again by the daily employment of tents. In spite, however, of the moderate amount of attention which was given it, the aperture became gradually contracted so as to cause much distress whenever the bowels were evacuated, and to lead the parents to bring the child again for operation, in the spring of 1863, when it was about two years old. The operation was performed by passing a curved instrument into the fistulous opening, turning it backwards, and pressing the intestine down upon its point where the sphincter ani muscle should naturally be situated. Here a dissection was made until the sound was exposed, and the intes-

* For the references to these cases I am indebted to the valuable paper of Dr. George H. Gay, in the published "Records of the Boston Society for Medical Improvement," for November, 1857.

† I have performed a similar operation in cases of occlusion of the vagina, dissecting out the whole mass of obstructing tissues and bringing together with sutures the upper and lower portions of mucous membrane. The successful operations of Amussat for imperforate rectum were also done in the same way.

tine freely opened by a crucial incision. The intestine was now attached by two or three points of suture to the skin, and a tent passed well into the opening. The child bore the operation well. After a few days the tent was removed, and the daily use of bougies, gradually increasing in size, was commenced. By the end of the third week it became difficult to introduce the bougie, owing to the very powerful resistance offered by the sphincter muscle; this, however, always yielded to pressure, and the removal of the bougie was followed by a free discharge of faecal matter. At the end of a month the child left the Hospital, the mother being requested to bring her twice a week in order to have the bougie passed and the abnormal opening cauterized for the purpose of closing it. Three months afterwards the case was lost sight of, a small fistulous opening still remaining, through which there was occasionally a slight discharge; the new anus performed its functions perfectly.

CASE II.—*Imperforate Anus, with Rectum opening into the Vagina.*—In June, 1863, a fine, healthy girl, six weeks old, was brought to me, with the rectum terminating in the vagina. An incision had been made by the attending physician at the point where the anus would be naturally situated, but he had not succeeded in establishing the passage. On account of the very early age of the child, and the small size of the organs, it was very difficult to determine the exact condition of the parts. The mother said that the child was perfectly well, except that the discharges took place through the vagina. A probe passed into the vagina entered about two inches; in front of this another probe could be passed into the urethra, these two passages being entirely distinct. After considerable manipulation it was found that the whole posterior wall of the vagina, and the corresponding anterior wall of the rectum, were wanting. The operation for the restoration of the natural passage was done as follows: A large silver hook with a ball at the end, was passed into the vagina and forced down against the spot at which it was proposed to make the new opening. Here it could be indistinctly felt through the thick mass of the soft parts which intervened. A crucial incision was made through the skin, and the soft parts dissected to either side until the silver ball, pressing down the intestine, was felt in the wound, the wall of the intestine only intervening. A small aperture was now made in the gut and the hook passed through, so as to hold the parts in position. The aperture in the intestine was now enlarged and its margins stitched to the integuments by four sutures. A plug was then introduced into the opening to the depth of an inch and a half or two inches. After the operation a free discharge took place from the vagina, showing that the plug would not interfere with the passage of the faeces while the new anus was being established.

This case has been under observation until the present time (now nearly a year). A large and well-formed canal has been established in the normal position, through which well-formed solid dis-

charges take place from time to time, while the more liquid fæces still make their way through the vagina. The child is still too young, and the vagina at present too inaccessible for any attempt to be made to close the abnormal passage; this it is proposed to do at a later period. Meanwhile the child enjoys perfect health.

CASE III.—*Imperforate Rectum.*—April 9, 1864. A very small child three days old, which had not yet nursed, was brought to me with the rectum imperforate about three quarters of an inch above the anus. The abdomen was distended almost to bursting. The child quiescent. A finger being introduced into the anus, encountered the obstruction, but there appeared to be no rounding out of the septum, indicating the continuance of the canal above. It was, however, decided to make an exploratory puncture with a trocar. On the instrument being thrust in, the meconium began slowly to flow out, until at least half a pint had escaped, when on pressure being made on the abdomen flatus followed. The finger was now passed up above the obstruction so as to freely dilate it. No large cavity or depot of the fluid could be detected. It was advised that the finger should be passed up once or twice a day, which the medical attendant promised to do, and also to report the course of the case.

The child took food immediately after the operation, and for a time seemed relieved. It died, however, the same night, about twelve hours after the operation. On examination a quantity of blood was found in the abdominal cavity, but no meconium. A fibrous cord about an inch long intervened between the rectum below and the cul de sac of the imperforate intestine above. The great distension of the intestine by meconium had forced it down into the pelvis, bringing it in contact with the bottom of the anal cavity. On thrusting in the trocar the intestinal contents freely escaped, but on the withdrawal of the canula the upper portion of intestine retracted, and the aperture in it closed so as to be with difficulty distinguished. The oozing of blood into the abdominal cavity probably took place from the lower aperture. The very unusual state of the parts disclosed by the autopsy showed that no operation could have been of service.

CASE IV.—*Imperforate Rectum.*—May 12, 1864. A female child, not quite 24 hours old, was lately brought to me with imperforate rectum. The abdomen was quite distended, vagina and anus natural; the little finger could be passed half an inch within the anus, when it was suddenly arrested. When the child strained a sensation was felt of something pressing down on the finger, but it did not convey the impression of a portion of intestine distended with fluid. On passing the little finger of the other hand into the vagina, the uterus could be distinctly felt as in its natural position. The finger could then be passed over the finger in the anus against the spine, but detected no tumor; nor could any appearance of distended intestine be distinguished elsewhere, although the finger could be turned round

and felt through the parietes of the abdomen. A probe was passed a little way into the urethra, but did not penetrate the bladder, although urine, thick and apparently semi-purulent, was discharged when the examination was commenced. It was thought possible, but not probable, that the intestine might communicate with the bladder. Under the circumstances no operation was advised. Dr. D. W. Cheever, who had examined the patient the day before, had already given the same opinion.

This patient lived nine days, taking little or no nourishment, the abdomen becoming gradually more and more distended. On post-mortem examination the intestine was found to terminate in a cul de sac between one and two inches above the imperforate anus; the sigmoid flexure, instead of being in its proper place, was found transposed to the right iliac region, where it lay in contact with the right side of the vagina, from which it could readily have been reached and punctured. A probe was easily passed to the fundus of the uterus, the os and cervix being very large. I was surprised to find with what ease the little finger could be passed without violence to the very bottom of the vagina, a fact which may be of material importance in elucidating some of these very obscure cases.

The specimen, together with that last mentioned, are now in the Warren Anatomical Museum.

PROF. GREENE'S CLINIC AT BERKSHIRE MEDICAL COLLEGE.

REPORTED BY FRANK K. PADDOCK, CLERK OF CLINIC.

[Communicated for the Boston Medical and Surgical Journal.]

Nov. 29, 1862.—*Necrosis of Inferior Maxilla*.—Mrs. H., aged 40 years. Began one year since to have considerable swelling of the tissues surrounding the lower jaw, with entire absence of pain. The swelling continued, without any apparent change or additional symptom, until four months previous to presenting herself at the clinic, when suppuration took place, accompanied by severe pain in the jaw, and a number of abscesses were formed in the subcutaneous tissue. The health of the patient, which had been unexceptionably good for the twenty years previous that had been spent in the family of Gov. Briggs as a domestic, now began to decline rapidly. She was emaciated, had lost her appetite and former constitutional vigor, giving her a decided cachectic appearance. Her teeth had been gone several years. An examination was made by passing a probe through the fistulous openings connected with the abscesses, and the bone found to be carious and separated from the periosteum, the sequestrum of the right side being loose and detached from the ramus.

Prof. Greene advised the removal of the jaw as soon as the cachexia of the patient could be corrected. This result was secured

in a few weeks by the administration of ferruginous and vegetable tonics. Prof. Greene then performed the operation by making an incision within the mouth, through the tissues covering the alveolar processes down to the bone, extending from one ramus to the other. These tissues were dissected off, and the left ramus removed from the body of the jaw with the bone forceps, the body being removed through the mouth intact, without an external incision. The wound healed rapidly, and the patient's health continued to improve. Soon a new but small arch of bone was found, formed in place of the removed jaw, and is now gradually increasing in size.

Prof. Greene remarked, that owing to the absence of any apparent idiopathic or traumatic cause for the disease of the bone in this case, its etiology was very obscure, but that it simulated closely the phosphoric disease which often occurs in the facial bones of persons employed in the manufacture of matches, or in other business necessitating the inhalation of phosphorus fumes.

Warty Tumor of Eye.—James P., aged 50 years. Has a warty tumor upon conjunctiva, covering left eye-ball. Prof. Greene remarked that these warty tumors of the conjunctival membrane, although primarily benign, unless removed in an early stage of growth were liable to take on a malignant form of disease.

Prof. Greene excised the tumor, the wound healing without farther treatment, leaving the patient's vision unimpaired and appearance much improved.

Multiple Fatty Tumors.—Jacob T., aged 35 years. Has extending over trunk and limbs, leaving head and neck entirely free, a large number of small tumors, varying in dimensions from the size of a pea to that of an egg. Had applied to quite a number of physicians for treatment, all of whom had called this trouble an enlargement of the lymphatics.

Prof. Greene observed, that owing to their irregular distribution, peculiar feel and absence of all the usual constitutional symptoms attending inflammation and enlargement of the lymphatics, his diagnosis would be fatty tumors; that the patient's declining health, which had been progressing for some time, was attributable to over-medication as a natural consequence of an incorrect diagnosis, rather than an evidence of increasing disease.

Prof. Greene recommended the patient to forget all his anxieties, and let the tumors remain until more fully developed; but his request was so urgent that the Professor finally removed one of the tumors to gratify him, which fully verified the diagnosis.

One year subsequently the tumors had not increased in size or number, and the patient was enjoying excellent health.

ON THE ACTION OF THE BROMIDE OF POTASSIUM IN INDUCING SLEEP.

BY HENRY BEHREND, L.R.C.P.E., &c.

DR. GARROD, in his recent lectures on the British Pharmacopœia, has mentioned that the bromide of potassium, when administered in large doses, produces drowsiness. I do not know whether the profession at large is aware of this fact, but as I have never previously seen any record of it (being indebted for my first information on the subject to the statements of Dr. Brown-Séquard), and as I have, during the past twelvemonth, had ample practical experience of its use, the following cases are submitted to demonstrate the value of the remedy in the treatment of insomnia and restlessness, accompanied by and dependent upon nervous excitement and irritability. If its employment upon a larger scale should confirm the results at which I have arrived (and of which Dr. Brown-Séquard has repeatedly assured me), its importance cannot well be overrated; as it is better borne than opium or any of its preparations, is free from the unpleasant effects—such as headache, constipation, &c.—produced by that drug, and the system does not so rapidly become accustomed to it as to require its administration in constantly-increasing doses.

The first case in which I prescribed it was that of a gentleman, thirty-six years of age, of highly nervous temperament, who had undergone much mental excitement consequent upon the dangerous illness of a very near relative. There was no constitutional malady present, and the only symptom was loss of sleep, and the debility, both bodily and mental, consequent upon it. He had not enjoyed a really good night for weeks, and this preyed upon him to such an extent as almost to preclude the possibility of his sleeping; for his mind was constantly intent upon this one subject, and never more so than when he retired to rest, so that it seemed as if the very effort to obtain sleep prevented its accomplishment. He was in very low spirits, and had failed in quieting the nervous system by opium in its various forms, valerian, and other anti-spasmodics and sedatives. He was recommended to take twenty-five grains of the bromide of potassium dissolved in a little cold water three times a day, before meals, for a week. At the end of this time, he called to inquire if it was necessary to continue the treatment, as he had enjoyed several nights' excellent sleep, and had to a considerable extent regained his former cheerfulness and mental calibre. As he was still, however, somewhat nervous about his night's rest, it was thought advisable that he should not entirely give up the employment of the bromide; and he continued taking it once in the twenty-four hours, at bedtime, for a fortnight longer. He had now implicit confidence in the power of the remedy, and, what was of still greater consequence, was regaining confidence in his own powers of obtaining natural sleep, and he gradually ceased having recourse to the medi-

cine. He always, however, kept a dose of it by his bedside, so that if he woke in the night and was tormented by the fear of not sleeping again, he might at once take it. During the last few months this fear has also left him, and he does not now use the bromide on the average more than once in three weeks. He sleeps perfectly well for six or seven hours at a time, and wakes comfortably and naturally, with entire freedom from the dread and depression which he formerly experienced on waking.

A second case, perhaps even more remarkably illustrative of the beneficial action of this salt, is that of a gentleman, forty years of age, who consulted me in the month of October last. He was of a most excitable and nervous temperament, and was engaged in mercantile transactions of great magnitude, the extent of which indeed seemed quite to overwhelm him, although without any grounds as to a fear of their ultimate result in a pecuniary point of view. He was quite unable, however, to banish them from his mind day or night; he had lost his natural sleep, was harassed and fatigued during the day, and sought my opinion as to whether he ought not at once to withdraw from business, although the sacrifice entailed thereby would be very great, and he was most anxious to avoid it. I told him to place himself under treatment for a few weeks, and if no benefit were derived at the end of that time, such a step as he contemplated might be necessary. I prescribed the bromide of potassium as in the last case: twenty-five grains to be taken three times a day before meals. At the end of a week he was much better, slept naturally and well, and was consequently much more sanguine as to his capability of attending to his affairs. Good sleep having been procured, I thought it better to attend to the condition of the nervous system, and ordered the sulphate of strychnia to be taken in commencing doses of the thirtieth of a grain, to be gradually increased to the tenth of a grain, thrice daily. He was advised to have a dose of the bromide of potassium by his bedside, or to take one before going to bed, if he felt nervous about his night's rest; but since the first week of the treatment I do not think he has once found it necessary to have recourse to it. He sleeps perfectly well, has regained spirits and confidence, and has quite abandoned the idea of his unfitness to attend to his business transactions. He continues taking the tenth of a grain of sulphate of strychnia twice daily.

Other instances might be adduced of a similar character, but the above will serve as a type of the cases in which the administration of the bromide of potassium appears likely to be most useful—those, namely, in which the nervous element preponderates; and it is in these that, for the most part, opium and its preparations fail to produce any good result, and are not well borne by the system, frequently even adding to the excitement and irritability under which the patient labors. There can be no doubt, moreover, that cases of this type are unfortunately on the increase, since the highly artificial

mode of life of the present day, especially in large cities, perpetually stimulates the nervous energy to the highest possible degree; so that even in the strongest constitutions the mental equilibrium is but too often shaken, and the weaker ones yield speedily to the excessive demands made upon them. The dose of the bromide recommended may appear large, but it is in all cases easily tolerated, and produces neither disagreeable nor toxic effects; the appetite is not interfered with, the alvine evacuations are regular and copious, and irritability of the bladder—a frequent accompaniment of restless nights—is greatly relieved. The only unpleasant result I have witnessed has been slight and temporary headache; and Dr. Brown-Séquard has informed me that he has given it with perfect safety for several successive weeks in drachm doses. Of the temporary paralysis, and weakening of sexual desire and power, which are said to follow upon the administration of large doses of the bromide of potassium, I have seen nothing. I should wish to try this remedy in the treatment of the restlessness of delirium tremens, but have not had the opportunity since I have become acquainted with its action upon the nervous system.—*London Lancet*.

ASAFÆTIDA IN AFFGHANISTAN.

By M. C. COOKE.

To what was before known with certainty of Asafætida in Affghanistan may be added the following particulars, communicated principally by Dr. Bellew, who was formerly attached to the mission to Kandahar. Some portion may be a repetition of the same facts previously obtained by other travellers, and which are hereby corroborated; for other information now communicated, for the first time, Dr. Bellew is mainly responsible. This brief notice can, however, only be regarded as supplementary.

The asafætida of commerce is obtained from only one plant in Affghanistan, viz., *Narthex asafetida*. It grows wild on the hills about Herat and Furrah, and is never cultivated, though hundreds of the Kakar tribe from the Boree family, who collect the gum, remain in the deserts to tend and water the plant.

The "tear" sort is the gum resin that exudes, and dries drop by drop, from incisions around the top of the root; the "lump" sort is the gum resin as it exudes from a broad surface, as when the top of the root is sliced off. The latter sort is more frequently met with than the former, but I do not know of any difference in the qualities of the two sorts. There are several other umbelliferous plants in Affghanistan which resemble the asafetida plant in external appearance, and which also, like it, when wounded, exude a milky viscid sap, but I never heard that the sap of these plants (also gum resins) was ever collected by the natives, though the plants were

very abundant, especially on the western slopes and ranges of the Sufaid Koh.

The frail vaginated stem, or the lower cluster of sheathing leaves (of the asafetida plant)—the former belonging to old plants, and the latter to young ones—is removed at its junction with the root, round which is dug a small trench about six inches wide and as many deep. Three or four incisions are then made around the head of the root, and fresh ones are repeated at intervals of three or four days; the sap continuing to exude for a week or fortnight, according to the calibre of the root. In all cases, as soon as the incisions are made, the root-head is covered over with a thick bundle of dried herbs or loose stones, as a protection against the sun; where this is not done the root withers in the first day, and little or no juice exudes. The quantity of asafetida obtained from each root varies from a few ounces to a couple of pounds weight, according to the size of the roots, some being no bigger than a carrot, whilst others attain the thickness of a man's leg. The quality of the gum differs much, and it is always adulterated on the spot by the collectors before it enters the market. The extent of adulteration varies from one-fifth to one-third, wheat or barley-flour or powdered gypsum being the usual adulterants. The best sort, however, which is obtained solely from the leaf-bud in the centre of the root-head of the newly sprouting plant, is never adulterated, and sells at a much higher price than the other kinds. The price of the pure drug at Kandahar varies from four to seven Indian rupees per "mani-tabriz" (about 3 lb.), and of the inferior kinds, from one and a half to three and a half rupees per "man." The asafetida is commonly used by the Mahometan population of India as a condiment in several of their dishes, and especially mixed with "dal." It is not an article of general consumption in Afghanistan, though often prescribed as a warm remedy for cold diseases by the native physicians, who also use it as a vermifuge. The fresh leaves of the plant, which have the same peculiar odor as its secretion, when cooked, are commonly used as an article of diet by those near whose abode it grows; and the white inner part of the stem of the full-grown plant, which reaches the stature of a man, is considered a delicacy when roasted and flavored with salt and butter.

The annual value of the asafetida trade with India is estimated in the Government Reports of the North West Provinces at about £2,200.—*London Pharm. Jour.*, May 1st, 1864, from *The Technologist*.

Bibliographical Notices.

The Diseases of the Ear; Their Diagnosis and Treatment. A Text-Book of Aural Surgery in the form of Academical Lectures. By Dr. ANTON VON TRÖLTSCHE, Aural Surgeon and Lecturer in the University

in Wurzburg, Bavaria. Translated from the German and Edited by D. B. Sr. JOHN ROOSA, M.D., Assistant Surgeon to the New York Eye Infirmary. Illustrated with Wood Engravings. From the Second and last German Edition. New York: William Wood & Co., 1864. pp. 254.

The Ear; Its Diseases and their Treatment. Illustrated by Engravings. By FRANZ ADOLPH VON MOSCHISKER, M.D., Oculist and Aurist, &c. &c. Philadelphia: Martin & Randall. Boston: Brewer & Tileston. 1864. pp. 319.

The Aural Surgery of the Present Day. By Dr. W. KRAMER, Berlin. With Two Tables and Nine Wood Cuts. Translated by HENRY POWER, Esq., F.R.C.S., M.B. Lond., &c. &c. Publication of the New Sydenham Society. London. 1863. pp. 154.

THE work of Von Tröltzsch consists of a series of twenty-five lectures, each of moderate length and well and clearly written. The colloquial and easy style of the author, while it in no degree detracts from the importance of the topics he discusses, is suited to interest the reader, and to engage his careful attention. Those, therefore, who do not read the German language, have great reason to thank the translator, Dr. Roosa, for presenting to them this valuable volume in an English dress. The rendering of the original, it is true, bears constant marks of imperfect knowledge of our idiom; but the book is a very readable one, and an acquisition to the library of the practitioner in general, as well as to the specialist, in the diseases of which it treats. We must here add, that we have heard it stated by an eminent aurist, that the translation fails, in some instances, fully or rightly to express the author's ideas. These instances, however, are but few, and the general success attained may well excuse these departures.

The author in his opening lecture alludes to two facts, which have only slowly, and of late, come to be—we had almost said unwillingly—acknowledged; viz., the great frequency of diseases of the ear, and their extreme importance. A somewhat extended experience, for the past few years, has convinced us how wide a field is open to the aural surgeon. This is, perhaps, even more the case in Europe than in this country; or it may be that the greater attention given to diseases of the ear both in Great Britain and on the Continent of Europe, has drawn more patients to the public institutions established for their relief, and augmented also the private lists of those practitioners who are specially, or in part, devoted to this branch of medical science. Great would be the surprise of those not familiar with the facts, at the throngs of ear patients who besiege the infirmaries and dispensaries in London—to cite that city alone—and who enjoy there the privilege of the ministrations of such men as Toynbee and Harvey—not to mention others. Dr. Tröltzsch, however, very justly remarks the lack of systematized teaching upon the diseases of the ear, nearly everywhere. In our own experience, as much truly practical information is to be obtained by those having the *entrée* to the public practice of the distinguished aural surgeons of Great Britain, as in any other portion of Europe.

Whilst the study of aural diseases has only been of late, as it were, struggling into notice, its importance has impressed itself upon many

industrious and gifted men, whose careful analysis of cases and skilful treatment have already advanced the branch to a first-class position. The authors whose names we have placed at the head of this paper, as well as all observers qualified to pronounce upon the subject, remark the wide-spread ignorance that still exists in the community in reference to ear-diseases, and the imperative necessity of bringing them under proper care at an early stage of their existence. The popular idea has always been, and, to a wonderful extent, still is, against any interference, whatever, in ear-affections; unless, indeed, it be to endeavor to allay pain, and to remove inspissated and superabundant cerumen. It is notorious that the greatest unwillingness is constantly met with, amongst the friends of patients with *otorrhœa*, for example, in regard to the intervention of our art. They are either "afraid to have the running stopped, lest the brain should suffer;" or they think it "will wear itself out, in time." It is nearly a daily experience with us, to encounter these delusions; and, not very infrequently, we are sorry to say, these erroneous and most mischievous views have been confirmed by the physicians usually in attendance in the family. A little boy is now under our care with caries of the mastoid process, following long-continued *otorrhœa*. The physician's advice, persistently, had been only "to keep the ear clean." An unrecognized polypus likewise existed. In another instance, seen only a day or two since, the mastoid processes and a portion of one temporal bone are extensively carious, from neglected *otorrhœa* following scarlet fever. The "let-alone" practice had been eminently efficacious and successful! It would seem to be the imperative duty of reasonable people, both in and out of the profession, to dispel, as far as it lies in their power, this lamentable ignorance.

A lengthened and detailed review of the work of Dr. Tröltzsch is only what is due to its merits, but must come from other hands. We merely purpose to advert, briefly, to some of the more striking and valuable views he presents, and to hint at certain differences in practice, which, as it seems to us, distinguish the German aural surgeons, as a class, from the English, and perhaps from the French. Our aural practitioners, here, have, we think, been mainly influenced by the British authorities, although not ignorant of, nor failing to recognize the merits peculiar to, the German theory and practice.

There is nothing especially new in Dr. Tröltzsch's directions for examining the external ear. All that he says, however, seems to us eminently judicious, clear and practical. We come, now, to his peculiar ideas on the illumination of the ear, with the view to inspecting its condition. He is not inclined to favor the use of *direct* sunlight illumination, but prefers the method which he claims as original with himself. This is by means of reflected, and not of direct light. The following is the translator's rendering of his author, on this subject:—"If we take a sufficiently large and strong concave mirror, and throw, by means of it, a strong stream of ordinary daylight upon the ear, we can see the parts clearly to the minutest portion, which with the naked eye is impossible, and this method sweeps away all the evils attending the other ones." * * * * The use of the reflector enables you to turn the ear away from the window, the patient being between the window and the surgeon. * * Sunlight thrown directly into the ear is too dazzling, and excites at the

same time a distinct feeling of heat in the membrana tympani. * * *

* The greatest advantage of this method of illumination, however, is that it may be practised in all kinds of weather, when the patient lies in bed (if necessary with a candle), and we are not obliged to turn the patient to a window if it be too far off, and a light-colored wall be near." (*op. cit.* pp. 31, 32.) The use of reflectors, in examinations of the ear, certainly did not originate with Von Trötsch; and we presume that all surgeons conversant with aural diseases are constantly in the habit, when the weather is unfavorable, of using artificially reflected light. Von Trötsch's method, by employing merely the *daylight*, reflected into the ear, and where "white or grey clouds" afford him "the best light," we cannot regard as, par excellence, the method for illuminating the ear. We are borne out in our convictions of the invaluable efficacy of direct sunlight, properly managed, for making aural examinations, by the majority of observers. The heating of the membrana tympani, alluded to by our author, we have never heard complained of, and the over-illumination referred to has never occurred to us. While not denying the worth of Dr. Trötsch's method, we do not join him, by any means, in pronouncing that it should do away with all others.

The author's remarks and directions in regard to syringing the ear, are worthy of careful observance. There is much to be learned, even in performing so apparently simple an operation. Laymen almost never syringe an ear properly. In regard to the reliance to be placed upon the syringe for the removal of foreign bodies, of whatever nature—unless metallic or stony, which are not commonly found—we cannot too strongly concur with Trötsch's advice,—“do not attach more importance to foreign bodies in the ear than really belongs to them, and try faithfully, with syringing, if you are not able to remove the body.” (p. 49.) We remark a case inserted by the translator, in this connection, which so nearly resembles one lately occurring to us, that we refer to it. A sentry on duty had “a bug” enter his ear:—efforts were injudiciously made by “non-medical men” to extract the insect by means of forceps! Much inflammation was excited, the operators working blindly, “with no knowledge of the situation of the bug.” Subsequent copious *syringing* brought the insect away. In our own case, a young woman came, saying she felt something moving “deep in one ear,” and she thought “there must be something alive there.” She also had much pain in the ear. On examination with the ear-speculum, brisk motion, as if of the antennæ or legs of some insect, was clearly observed, the insect being apparently in close contact with the membrana tympani. A little oil was turned into the ear; the disagreeable sensations ceased at once, and then a moderate syringing, with warm water, dislodged the intruder—dead—and an unmistakable *bed-bug*!

The chapter on furuncles in the auditory canal is full of sensible advice. Von Trötsch advocates early incisions, and does not wait for the formation of pus. Referring to local blood-letting, we can fully endorse his recommendations—and Wilde's before him—of applying leeches “on the meatus” (as the translator has it), rather than either before or behind the ear. We have found infinitely more advantage from having the leeches applied *within* the meatus, in inflam-

matory affections, whether of the meatus or of the middle ear, than from any more external abstraction of blood.

If there is any one point in which the German aural practitioners differ from most others, it is in their more fréquent—we had almost said in their constant—use of the Eustachian catheter, not only for diagnostic, but for therapeutic purposes. Perhaps we may be allowed to say that whilst there has, perhaps, been too much caution on the part of British practitioners, especially, there has been and still is rather too great a readiness to use the instrument alluded to, by the Germans and their followers. May not the old maxim, "*in medio tutissimus ibis*," be applicable here? It savors, to our mind, something of the hobby, this universal plunging of the silver tube, in all cases, even those the most remotely hinting at its use, into so delicately lined a canal. Even Von Tröltzsch, himself, says, "We find on the cadaver, erosions, and trifling ulcerations about the mouth of the tube, and these are not to be diagnosed without the Rhinoscope, and can [may] easily produce emphysema. It is very evident that such a delicate membrane, as we have here, can [may] be very easily injured." (*op. cit.* p. 90.) Toynbee, in his late elaborate work, may go somewhat too far in saying he is "disposed to think" the Eustachian catheter "useless as a means of diagnosis," but his caution in employing it, therapeutically, it seems to us, is preferable to its too common and nearly indiscriminate use. In the chapter on "Nervous Deafness," we cannot too highly recommend the warning of the author not to mistake—as has doubtless too often been done—a catarrhal affection of the middle or of the inner ear, for nervous disorder. "Where a doubt exists whether we have to do with a catarrhal or a nervous difficulty in hearing, whether with disease of the middle or the inner part of the ear, you will do well, in my opinion, in every relation, scientific as well as humane, to consider the first form the more probable one, especially since, in this event, a proper treatment, in most instances at least, is able to stop the progress of this evil, while real appearances in the inner part of the ear, if not dependent upon anomalies of blood and circulation, are, as a matter of course, almost entirely removed from our therapeutic interference, and we shall be obliged to 'let things go as it pleases God.'" (*op. cit.* p. 227.)

We have perused the above volume with pleasure and profit, and shall always consult it with confidence.

The work presented to the profession, and not to it, only, but avowedly to the *public*, by Dr. Von Moschzisker, is well printed and illustrated—also, well bound—with brilliant red edges to the leaves—and is garnished with a portrait of its author, scrupulously well "gotten up," in tightly buttoned coat, "garrotte" collar, elaborately brushed hair, and ribbon of some "order" seemingly at the second button-hole. This frontispiece we refer to merely as raising the question of good taste; and the latter is perhaps not much more violated, in this instance, than in the translation from Von Tröltzsch we have just been noticing. In that work, the frontispiece consists of a group of two figures, the aurist and his patient, the former in a be-flowered and besprigged *robe de chambre*, with its pendant tassels; the latter with a resigned expression of countenance, and in a jaunty, cross-legged posture. The surgeon is examining the ear, *à la mode de Von Tröltzsch*.

We will add that the copy of the original work, which we have inspected, has *not* such a frontispiece!

While we find nothing especially objectionable in the compilation of Dr. Von Moschzisker, we cannot say that anything original particularly strikes us. Indeed, the author seems to have a remarkable facility for transplanting whole pages in succession from other works to his own volume; and the illustrations equally come from well-known authors, if we except some few which he claims to have originated—and which are ingenious enough—being representations of instruments for the introduction of the cotton pellet as recommended by Yearsley in cases of perforated membrana tympani; and also figures of his own apparatus for transmitting vapors to the inner ear.

We remark that the author well describes “congenital closure” of the meatus auditorius externus—not, so far as we now remember, especially alluded to by authors. The affection, of course, is rare.—We some weeks since operated in a case where the meatus was smoothly closed, as if by a prolongation of the natural integument. This was not, however, congenital, but succeeded a violent inflammation of the parts, which followed measles. The remedial procedure adopted was that which we now observe Dr. Von Moschzisker describes, viz.:—a crucial incision, cutting out the flaps with small curved scissors, the introduction of a cylinder of prepared sponge, and the recommendation to insert a small golden tube, for a time, when the parts shall have cicatrized. Hearing, which was abolished prior to the operation, was immediately, in a measure, restored, and will doubtless improve. Unfortunately, the patient is an exceedingly delicate girl, and has caries of the bony meatus and mastoid process of the other side.

We referred to the popular appeal or intimation set forth by Dr. Von Moschzisker. In our opinion, such a course is far from being warrantable in any respectable and honorable practitioner—and such, we, of course, suppose Dr. Von Moschzisker to be. To announce that a medical book is written “for the public,” as well as for medical men, smacks too much of the personal element; and such works are liable, as in the present instance, to be heralded and concluded in somewhat pompous and inflated phraseology. They thus lose in true dignity, whilst they in no degree really advance that popular knowledge of the necessity of attention to diseases of the ear, to which we alluded in the first part of this paper. To endeavor to convey any knowledge *to the public* beyond this, is futile and dangerous. Does any one believe that a man or woman of the people, can manage, for themselves, an otorrhœa, or an ear-ache, with Dr. Von Moschzisker's book in one hand, and a syringe or a leech in the other? “A little learning is a dangerous thing.” Countless homœopaths thus practise upon themselves, with the Hand-books of their apostles for their guides. Peace be with them! But we cannot join Dr. Von Moschzisker, precisely, in his peroration, where he exclaims, funnily, “Lend me your ears!”

The book ends with a “Repertorium” of remedies (for the “public,” of course), systemic as well as local; an explanatory table of medical terms, symbols and abbreviations; a copious “Glossary” (for the public, again, we conclude); and an enumeration of authors in aural literature—all which, save the last, we deem superfluous—for that, the author certainly deserves our thanks.

We have given the title of Dr. William Kramer's work, merely that we may have the opportunity to congratulate the profession upon its acquisition in the form of so excellent a translation as that by Mr. Power, under the auspices of "The New Sydenham Society." The author's reputation is too widely extended to require any additional word from us. We will only say, in conclusion, that all who read "The Aural Surgery of the Present Day," cannot fail to join in a hearty acknowledgment of its value and interest. W. W. M.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JULY 14, 1864.

THE ARMY RATION.*—Surely a laudable task is this which Professor Horsford has undertaken, and as we shall see by his astounding statements, one worthy of engaging the attention of all well-wishers of our brave fellows in the field, as well as those desirous of lightening the financial burdens of the nation at large. War is an awfully expensive game, regarded merely from a prudential point of view, and seems to beget a recklessness and disregard of mere property which extend more or less from the field of military operations to the numerous ramifying interests more or less directly connected with it. Complaint enough has been made since the war began of improper food and insufficient supplies, not so much of late, happily, as formerly; but circumstances may at any moment arise which may lead to the old privations and their many direful consequences. We are glad, therefore, to see so vigorous an effort made, by one man at least, as the pamphlet before us shows, to avert such a catastrophe.

Prof. Horsford appears to have had two main objects in view when he undertook the task he has so well accomplished. The one, the supply to the troops of a nutritious, palatable and concentrated form of food, of a character much less perishable than that usually supplied; the other, the saving to the public treasury of an immense sum of money, amounting to millions in the aggregate, every year.

Passing over much interesting matter on the general subject of rations—how much food a soldier requires, a comparative statement of the allowance furnished in the principal armies of the world, the loss incurred in the process of salting meats, and the deleterious effects of prolonged use of them as articles of food, &c.—we come to "the Marching ration." We are all familiar with the announcement that the troops have been ordered to supply themselves with three, five or eight days' rations, in anticipation of a movement. Prof. Horsford thus shows what becomes of these rations:—

"These are given out, cooked, packed in the haversack and knapsack, and laid aside to await expected orders to march. Meanwhile the daily rations are issued, cooked and eaten. A few days pass; the necessity, real or fancied, for the move-

* The Army Ration. How to diminish its Weight and Bulk, secure Economy in its Administration, avoid Waste, and increase the Comfort, Efficiency and Mobility of Troops. By E. N. Horsford, late Rumford Professor in Harvard University, Cambridge, Mass.

ment has gone by, and the marching rations are found to be spoiled and are thrown away. Or, if the march is undertaken, with the haversack and pack stuffed to unwieldy size and weight, the soldier soon feels obliged to abandon a part of his load; if he stops to rest, and leans back on his pack, his hard bread is crushed; if it rains, and the pack does not wholly shelter the rations, the powdered crackers, sugar, coffee, and meat become, together, an offensive mass and a total loss. Sometimes the salt beef and pork, though issued, are not taken by the men, and constitute a part of the aggregate loss. These losses in the Army of the Potomac have been estimated by competent authority on the spot, from the organization of the army, to be *little less than one third of the total cost of the commissary supplies.*"

Here is room for improvement surely. One important item in which great saving might be effected, and a more palatable and digestive article of food supplied, is in the bread. Prof. Horsford discusses this subject quite at length, going into the chemistry of bread-making, pointing out how much more nutritious and digestible raised bread is than the bread of the soldier—discussing the methods by which the most nutriment may be obtained from a given quantity of wheat, and finally showing how a self-raising flour may be prepared so that any one, by the simplest processes of cookery, may at any moment obtain a light, palatable and digestible bread. Roasted and ground wheat, also, he recommends as a marching ration for its compactness, its durability and its very agreeable flavor. The mountaineer of Chili uses it as his sole food on long journeys. When hungry he stirs it into cold water and drinks it—and for weeks together depends upon it as his only food. The Texan ranger uses roasted or parched corn, ground and mixed with sugar. The Lake Superior voyageur and the trappers of that region use roasted and ground corn incorporated with melted fat. Many interesting pages we must thus hastily glance at, to come to the consideration of the "meat for the marching ration."

And here we must confess we are astounded at the facts and statistics which Prof. Horsford arrays before us. Let any one who wonders at the price of beef at the present day read this chapter, and his astonishment will vanish. The only wonder is that a sirloin steak or a roasting cut can be found in any butcher's stall, such a procession of beeves—in the largest part wantonly wasted and lost, from the defective methods in which the army is supplied—is steadily swallowed up in Virginia,—the front disappearing so rapidly that the rear can hardly keep up with the vanishing train. The transportation of the cattle from the West in crowded cars with little water, food or sleep, during several days of continuous travel, with the subsequent hard driving and scanty forage, greatly deteriorates the quality of the beef when it is slaughtered. The necessity of cooking it the very day the animal is killed, and the want of means for preserving it, together with the habitual improvidence of the soldier, entail a very great loss. In the ordinary process of slaughtering, the loss in weight from the removal of the viscera, &c., and the loss of blood, in good cattle fresh from the pasture, is said to be at least one third of the entire weight of the animal. This is technically called shrinkage. Of the actually edible portions seventy-five per cent. is water. Prof. Horsford says in this connection:

"In a practical experiment, which came to my knowledge as having recently been made in New York, with an ox weighing 1,200 pounds dressed, and of course some 1,800 pounds on foot, there were found 400 pounds of edible meat,

which yielded when dried to fibre some 112 pounds, a quantity amounting to 6.22 per cent. of the live ox. Small as this seems, the cattle in the train of an army on the march yield a much less return. The army rule in regard to beef-cattle is, that when the cattle weigh over 1,300 pounds on the hoof, 45 per cent. shall be deducted for shrinkage; when below 1,300 pounds, 50 per cent. The fat, it would seem, is assumed to have totally disappeared. But much more has, in reality, disappeared. From the statement of commissary officers having charge of the commissary supplies of some of the regiments of the Potomac army from its commencement, it appears that it requires about one ox and a half to furnish the fresh beef ration to a regiment of 225 men—or about six oxen to 1,000 men. This meat was issued as dressed quarters, which were weighed. So that twenty-four quarters of beef-cattle in the condition in which they are slaughtered in that army, weigh on an average 20,000 ounces, or 1,250 pounds. Assuming the bone, tendon, and gristle to be three-fourths of the whole dressed quarters, which is not far from the fact, there would remain 312 1-2 pounds of edible meat, or 52 pounds to an ox; of which one quarter only is dry nutriment, or 13 pounds to an ox. And this is an average specimen estimated by the commissary officers from whom I have received the information, to have weighed, when purchased by the Government, 1,300 pounds, on the hoof. Six of these must have weighed 7,800 pounds, and would cost now, delivered at eight cents a pound, \$624! *Seventy-eight pounds out of seventy-eight hundred! One per cent. only!*

Neither hide, bones, or tallow of any kind, as a general rule, is saved on the march. In a word, the dry edible fresh beef derived from cattle on the hoof, according to this estimate, costs the Government \$8 a pound, or with the three pounds of water \$2 a pound, or with the bone, tendon, and gristle 50 cents a pound. But a reduction so great cannot be presumed to be uniform in the Army of the Potomac, though it is known that during the last two winters the cattle got little or no forage from the time they were sent down by boat and the cars to Falmouth, and by cars to Brandy Station, till they were slaughtered. At Hilton Head the loss in flesh was less. At Chattanooga it was greater. Col. Eaton, in charge of the subsistence department at the post of New York, has informed me that the army ration of fresh beef at Hilton Head cost the Government 30 cents, at a time when canned meats of perfect quality, cost, delivered, but 16 cents a pound. Eight ounces of good canned meat may be assumed to be a full equivalent for the fresh beef ration with its bone, tendon, and gristle, as supplied to the individual soldier at Hilton Head. At the present prices of canned meats, of say 24 cents a pound, delivered, the ration of fresh beef at Hilton Head must cost the Government 45 cents. A pound must cost 36 cents, bone, tendon and gristle included. The edible meat would therefore cost some three to four times as much, say \$1 25 per pound, and with its water eliminated, \$5 per pound."

And yet this enormous expense, with its prodigious waste of the beef resources of the country, provides at best but very indifferent, and frequently deleterious fresh meat for the army. The inquiry naturally arises, is there any help for all this? Can the waste be stopped, and better food supplied; and, if so, how? This is the problem Prof. Horsford has undertaken to solve, and the result of its consideration is, that this end will be fully attained by preparing fresh meat at a distance from the seat of war—the animal being slaughtered when in a healthy condition; that it may be cooked, seasoned and made thoroughly palatable, and preserved indefinitely in the form of sausage. He shows that by proper apparatus the whole dressed carcass of the ox may thus be preserved.

"The mincing apparatus would reduce the meat to fineness; the steam or baking apparatus would boil, or bake, or roast it; currents of heated air would dry it; evaporating pans might perform the same office, at temperatures so low as to preserve in palatable form all the juices of the meat; and Papin's digesters would resolve a large part of what is now utterly lost on the march—soft bone, gristle, tendon and connective tissue, into most nutritious food, to be incorporat-

ed with the minced meat or used as stock for soup. The different kinds of meat, and the tongue, heart, brain, and concentrated soup stock might, for particular purposes, if desirable, be disposed in different sausages. But for army use, the whole might be resolved into homogeneous sausage meat.

"Such sausage might be fried or made to contribute to a stew, the great resort in camp, or hash with bread-crumbs or roasted wheat and water, or a soup with vegetables, when these may be procured. The only cooking utensil absolutely needed would be the half of an old regulation canteen, or even a drinking-cup.

By these two devices, the dried wheat and the saused beef, Prof. Horsford shows that a soldier might easily carry rations for twelve or even twenty days, of food which would be as good at the end of that time as at the beginning, and of greatly superior quality to that ordinarily used. He goes into a calculation based on the diminished bulk occupied by the various improved rations which he recommends, and the result is, that with the aid of mules carrying self-raising flour or roasted wheat and saused beef in bulk, it is not difficult to see that an army of one hundred thousand men might swing around from one base of supplies to another, with an interval of thirty or even forty days between.

The comparative expense of supplying the army with beef in the various methods which he discusses, is summed up as follows :—

"By the first method, the ox on the hoof at 8 cents a pound, and weighing at Washington 1,400 pounds, costs \$112.00, and yields 60 pounds of edible meat at \$1.86.6 per pound.

"By the second method, there are 450 pounds of canned meats, put up at Boston, at 23 cents a pound, and costing \$103.50; for transportation to the army, say \$4.50. Total, \$108; making 450 pounds at 24 cents a pound.

"By the third method, the live ox of 1,500 pounds weight, at 6 cents a pound in Illinois, would cost \$90.00; assume the cost of dressing, cooking, curing and packing at \$14.00. Total, \$104.00; to be reduced by the value of the hide and tallow, say \$16.00. For transportation of the saused meat of the entire ox, an equivalent of 700 pounds of edible meat reduced in weight to one third, say \$3.00; a net cost of \$91.00; making 700 pounds at 13 cents a pound.

"Placing these results side by side, the Illinois ox of 1,500 pounds weight on foot, would yield by the first method 60 pounds at \$1.86.6 a pound; total, \$112.00. By the second method, 450 pounds at 24 cents a pound; total, \$108.00. By the third method, 700 pounds at 13 cents a pound; total, \$91.00.

"To supply 100,000 men with alternate daily rations of 5 ounces of edible meat* for a year (the Potomac Army are supplied with fresh beef four days in the week) would cost—

By the first method - - - - -	\$11,136,328
" second " - - - - -	1,425,781
" third " - - - - -	741,406

"The saving to the Government by the adoption of the second method would be \$9,710,547; of the third method would be \$10,394,922."

The saving in the bread ration by the adoption of the various expedients suggested, is estimated at \$1,655,645 annually for an army of 100,000 men. Taking into consideration the numerous expenses incident to transportation, deterioration, &c., we have the following summing up, of the cost to the Government, above what it need be, applied to an army of 600,000 men for a single year.

"On the fresh beef ration, according to the extreme estimate in the Army of the Potomac - - - - -	\$62,334,632
Or according to the basis of the cost at Hilton Head - - - - -	38,930,957
On the marching ration - - - - -	39,420,000
On the average bread ration - - - - -	9,933,870

* This is the estimated quantity which the 20 ounces of poor meat, with its bone, tendon, gristle, &c., actually yields to the soldier.

Well may our author add, in view of such wholesale waste, that "the cattle of the country are *disappearing*. Our ability to furnish the army with fresh beef is diminishing in a fearful ratio."

Prof. Horsford's pamphlet treats of various other topics which we have no room to notice—such as coffee, tobacco, the waste of fresh bread by drying, &c. He also suggests some very ingenious utensils for cooking in the field, of so simple a character that the soldier may always have them with him; but all these we must pass over to come to his concluding

"*Summary*.—The proposed modifications in the ration would reduce the consumption of flour from *one half* to *two thirds*, with increased comfort and profit to the men, saving of transportation to the Government, and of raw material to the country.

"They would reduce enormously the consumption of cattle, with advantage to the soldier, saving to the Government in money and of cattle to the country.

"They would, in great degree, prevent the loss of the one third of the total commissary supplies now sacrificed in the marching ration.

"The weight of the day's marching ration might be reduced from 13 to 16 ounces, in place of the present ration of from 32 to 40 ounces; and in bulk, to 35 cubic inches, in place of the present 100 cubic inches, without any diminution of the nutritive value. Twenty days' rations of the proposed supply may be more easily carried than the present eight days' rations.

"Finally, the proposed ration would increase the mobility of the army, and save time."

Making all due allowances for theoretical calculations, we think it must be evident to every one that there is much in Professor Horsford's pamphlet worthy of the most serious consideration. Of course no one supposes that fresh or salted meat will ever be wholly supplanted in army use by the articles which he recommends; the most that could be looked for would be their limited use under circumstances which would make them specially valuable. Whether the experiment will ever be tried, is very uncertain. It is a gigantic task to break down a routine system on so large a scale as that in our army. Private enterprise, the action of some single State with regard to its own soldiers or a part of them, might make an experiment which would lead the Government to undertake it on a larger scale. We hope that the statements which we have exhibited to our readers may not be entirely words thrown away.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, JULY 9th, 1864.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	43	32	75
Ave. mortality of corresponding weeks for ten years, 1853-1863,	39.1	33.2	72.3
Average corrected to increased population	00	00	79.58
Death of persons above 90	0	0	0

DEATHS IN BOSTON for the week ending Saturday noon, July 9th, 75. Males, 43—Females, 32.—Abscess, 1—accident, 5—inflammation of the bowels, 1—disease of the brain, 3—inflammation of the brain, 2—cancer, 1—cholera infantum, 1—consumption, 10—convulsions, 1—croup, 1—debility, 1—diarrhoea, 3—diphtheria, 1—dropsy of the brain, 1—dysentery, 4—scarlet fever, 4—ship fever, 1—typhoid fever, 2—gangrene, 1—gravel; 1—disease of the heart, 2—homicide, 1—infantile disease, 2—jaundice, 1—jumping from window (under the influence of delirium tremens), 1—congestion of the lungs, 1—disease of the lungs, 1—inflammation of the lungs, 3—marasmus, 3—old age, 1—paralysis, 1—puerperal disease, 2—scrofula, 1—smallpox, 2—unknown, 7—gunshot wound, 1.

Under 5 years of age, 35—between 5 and 20 years, 9—between 20 and 40 years, 16—between 40 and 60 years, 13—above 60 years, 3. Born in the United States, 49—Ireland, 21—other places, 5.